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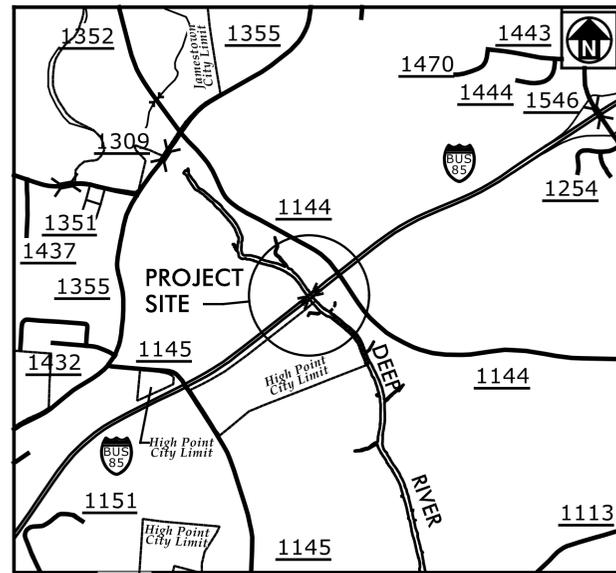
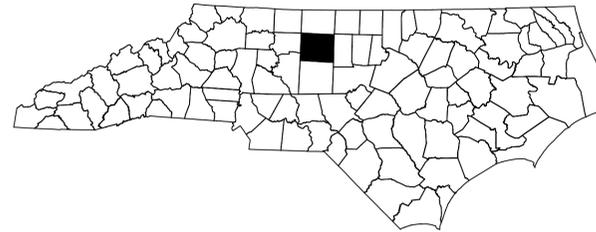
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

GUILFORD COUNTY



LOCATION: REPLACE BRIDGE N. 242 AND BRIDGE NO. 237 OVER DEEP RIVER IN HIGH POINT ON US 29 /70 /I-85 BUSINESS

TYPE OF WORK: GRADING, DRAINAGE, PAVING, & STRUCTURE

INDEX OF SHEETS

<u>SHEET NO.</u>	<u>TITLE</u>
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (GENERAL NOTES AND MANAGEMENT STRATEGIES)
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SHEET NO.
TMP-1

B-5351

TIP PROJECT:

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N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. E. HUMMER, PHD, P.E. STATE TRAFFIC MANAGEMENT ENGINEER

_____ TRAFFIC CONTROL PROJECT ENGINEER

_____ TRAFFIC CONTROL PROJECT DESIGN ENGINEER

D. E. RICHARDSON TRAFFIC CONTROL DESIGN ENGINEER



APPROVED:  Steve Miller

DATE: 2/8/2018

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ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES - TYPE III
1150.01	FLAGGERS
1180.01	SKINNY DRUMS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)

- WORK AREA
- REMOVAL
- WEDGING UNDER TRAFFIC
- USER DEFINED (IF NEEDED)

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	PAINT (4")		PAINT MARKING SYMBOLS
P8	2 FT. - 6 FT./SP WHITE MINISKIP	QA	LEFT TURN ARROW
PA	WHITE EDGELINE	QB	RIGHT TURN ARROW
PB	YELLOW EDGELINE	QC	STRAIGHT ARROW
PC	10 FT. WHITE SKIP	QE	COMBO STRAIGHT RIGHT ARROW
PD	3 FT. - 9 FT./SP WHITE MINISKIP		
PE	WHITE SOLID LANE LINE		
PI	YELLOW DOUBLE CENTER		
	PAINT (24")		
P2	WHITE STOPBAR		

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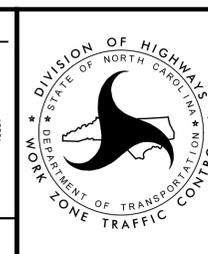
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APPROVED: *Steven Miller*
DATE: 2/8/2018

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**ROADWAY STANDARD
DRAWINGS & LEGEND**

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
US 29/70/I-85 BUS	MONDAY THROUGH SUNDAY 6:00 A.M. TO 7:00 P.M.

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME	HOLIDAY
US 29/70/I-85 BUS	

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31ST TO 7:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 7:00 P.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 7:00 P.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 7:00 P.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 7:00 P.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 7:00 P.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
9. FOR THE CITY OF HIGH POINT FURNITURE MARKET, BETWEEN THE HOURS OF 6:00 A.M. THE MONDAY THAT THE MARKET BEGINS AND 7:00 P.M. THE FRIDAY THAT THE MARKET ENDS.
10. FOR THE WYNDHAM GOLF TOURNAMENT, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF THE TOURNAMENT AND 7:00 P.M. THE FOLLOWING MONDAY AFTER THE WEEK OF THE TOURNAMENT.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- C) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

G) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

PAVEMENT EDGE DROP OFF REQUIREMENTS

H) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

I) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 500 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

J) NOTIFY THE ENGINEER 30 DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

K) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

L) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

M) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES), AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

N) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

O) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES (DRUMS) PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

P) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
US 29/70/I-85 BUS	PAINT	TEMPORARY RAISED

Q) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.

R) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

S) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

T) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.

MANAGEMENT STRATEGIES

- US 29/70/I85 TRAFFIC WILL BE MAINTAINED THROUGH THE USE OF AN ON SITE DETOUR DURING CONSTRUCTION.
- DRIVEWAY ACCESS WILL BE MAINTAINED THROUGHOUT THE PROJECT.

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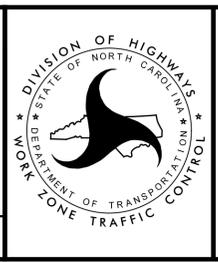
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DATE: 2/8/2018

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TRANSPORTATION OPERATIONS PLAN AND MANAGEMENT STRATEGIES

TEMPORARY SHORING NO. 1 NOTES

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION 20+61.00 +/- -DET1-, 21 FT RT TO STATION 20+86.00 +/- -DET1-, 21 FT. RT FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 PCF
 FRICTION ANGLE, (ϕ) = 30 DEGREES
 COHESION (c) = 0 PSF
 GROUNDWATER ELEVATION = 682 FT.

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 20+61.00 +/- -DET1-, 21 FT RT, TO STATION 20+86.00 +/- -DET1-, 21 FT RT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 20+61.00 +/- -DET1-, 21 FT RT, TO STATION 20+86.00 +/- -DET1-, 21 FT RT. MAY NOT PENETRATE BELOW ELEVATION 691 FT. DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS, OR WEATHERED OR HARD ROCK.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION 20+61.00 +/- -DET1-, 21 FT RT, TO STATION 20+86.00 +/- -DET1-, 21 FT RT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION 20+61.00 +/- -DET1-, 21 FT RT, TO STATION 20+86.00 +/- -DET1-, 21 FT RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

TEMPORARY SHORING NO. 4 NOTES

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION 24+25.00 +/- -L-, 3 FT LT TO STATION 24+50.00 +/- -L-, 3 FT. LT FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 PCF
 FRICTION ANGLE, (ϕ) = 30 DEGREES
 COHESION (c) = 0 PSF
 GROUNDWATER ELEVATION = 682 FT.

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 24+25.00 +/- -L-, 3 FT LT, TO STATION 24+50.00 +/- -L-, 3 FT LT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 24+25.00 +/- -L-, 3 FT LT, TO STATION 24+50.00 +/- -L-, 3 FT LT. MAY NOT PENETRATE BELOW ELEVATION 675 FT. DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS, OR WEATHERED OR HARD ROCK.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION 24+25.00 +/- -L-, 3 FT LT, TO STATION 24+50.00 +/- -L-, 3 FT LT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION 24+25.00 +/- -L-, 3 FT LT, TO STATION 24+50.00 +/- -L-, 3 FT LT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

TEMPORARY SHORING NO. 2 NOTES

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION 22+00.00 +/- -L-, 3 FT LT TO STATION 22+25.00 +/- -L-, 3 FT. LT FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 PCF
 FRICTION ANGLE, (ϕ) = 30 DEGREES
 COHESION (c) = 0 PSF
 GROUNDWATER ELEVATION = 682 FT.

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 22+00.00 +/- -L-, 3 FT LT, TO STATION 22+25.00 +/- -L-, 3 FT LT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 22+00.00 +/- -L-, 3 FT LT, TO STATION 22+25.00 +/- -L-, 3 FT LT. MAY NOT PENETRATE BELOW ELEVATION 686 FT. DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS, OR WEATHERED OR HARD ROCK.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION 22+00.00 +/- -L-, 3 FT LT, TO STATION 22+25.00 +/- -L-, 3 FT LT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION 22+00.00 +/- -L-, 3 FT LT, TO STATION 22+25.00 +/- -L-, 3 FT LT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

TEMPORARY SHORING NO. 3 NOTES

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION 22+84.00 +/- -DET1-, 21 FT RT TO STATION 23+09.00 +/- -DET1-, 21 FT. RT FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 PCF
 FRICTION ANGLE, (ϕ) = 30 DEGREES
 COHESION (c) = 0 PSF
 GROUNDWATER ELEVATION = 682 FT.

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 22+84.00 +/- -DET1-, 21 FT RT, TO STATION 23+09.00 +/- -DET1-, 21 FT RT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 22+84.00 +/- -DET1-, 21 FT RT, TO STATION 23+09.00 +/- -DET1-, 21 FT RT. MAY NOT PENETRATE BELOW ELEVATION 675 FT. DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS, OR WEATHERED OR HARD ROCK.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION 22+84.00 +/- -DET1-, 21 FT RT, TO STATION 23+09.00 +/- -DET1-, 21 FT RT.

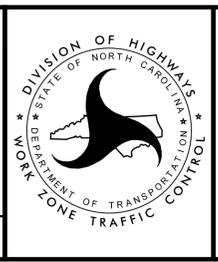
AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION 22+84.00 +/- -DET1-, 21 FT RT, TO STATION 23+09.00 +/- -DET1-, 21 FT RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH A SEALED DOCUMENT FROM THE NCDOT GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS PROVIDED ON FEBRUARY 8, 2018 AND SEALED BY A PROFESSIONAL ENGINEER, GREGORY CHARLES BODENHEIMER, P.E., LICENSE # 032568.

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TEMPORARY SHORING DATA

PHASING

PHASE I

STEP 1: USING ROADWAY STANDARD DRAWING (RSD) 1101.01 SHEET 1 AND 3 OF 3, INSTALL ADVANCE WARNING SIGNS ON US 29/70/I-85 AND ON RIVER ROAD.

STEP 2: USING RSD 1101.02 SHEET 1 AND 3 OF 14 WHERE NECESSARY, PLACE TRAFFIC CONTROL DEVICES AS SHOWN ON TMP-4 AND TMP-5 AND CONSTRUCT THE FOLLOWING:
 -DET1- FROM -L- STA 12+28 TO -L- STA 32+74.
 -TEMPORARY PAVEMENT FROM -L- STA 10+95+/- TO -L- STA 22+25+/- (SEE TMP-4) AND FROM -L- STA 26+80+/- TO -L- STA 35+48+/- (SEE TMP-5).

STEP 3: USING RSD 1101.02 SHEET 1 AND 3 OF 14, PERFORM THE FOLLOWING IN A CONTINUOUS MANNER:
 A) USE WEDGING TO CONSTRUCT A TIE-IN FROM THE EXISTING ROADWAY TO THE PHASE II DETOUR PATTERN AS SHOWN ON TMP-6 AND TMP-7.
 B) INSTALL TEMPORARY PAVEMENT MARKINGS AS SHOWN ON TMP-6 AND TMP-7.
 C) PLACE TRAFFIC CONTROL DEVICES AND SHIFT TRAFFIC TO THE PHASE II DETOUR PATTERN BY THE END OF THE WORK DAY. ACTIVATE TEMPORARY SIGNAL.

PHASE II

STEP 1: WITH TRAFFIC IN THE PHASE II DETOUR PATTERN, USE RSD 1101.02 SHEET 3 OF 14 TO CONSTRUCT THE RIGHT SIDE OF -L- (INCLUDING THE STRUCTURE) FROM STA 16+50+/- TO STA 29+00+/- AS SHOWN ON TMP-6 AND TMP-7 UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE. ENSURE THAT RUNOFF DRAINS AND THAT PONDING IS PREVENTED.

STEP 2: USING RSD 1101.02 SHEET 1 AND 3 OF 14, PERFORM THE FOLLOWING IN A CONTINUOUS MANNER:
 A) USE WEDGING TO CONSTRUCT A TIE-IN FROM THE PHASE II DETOUR PATTERN TO THE PHASE III DETOUR PATTERN AS SHOWN ON TMP-8 AND TMP-9.
 B) INSTALL TEMPORARY PAVEMENT MARKINGS AS SHOWN ON TMP-8 AND TMP-9.
 C) PLACE TRAFFIC CONTROL DEVICES AND SHIFT EASTBOUND TRAFFIC TO THE PHASE III DETOUR PATTERN BY THE END OF THE WORK DAY. MODIFY TEMPORARY SIGNAL.

PHASE III

STEP 1: WITH TRAFFIC IN THE PHASE III DETOUR PATTERN, USE RSD 1101.02 SHEET 3 OF 14 TO INSTALL TEMPORARY SHORING LOCATION 1, LOCATION 2, LOCATION 3 AND LOCATION 4 AND CONSTRUCT THE LEFT SIDE OF -L- (INCLUDING THE STRUCTURE) FROM STA 16+50+/- TO STA 29+00+/- AS SHOWN ON ON TMP-8 AND TMP-9 UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE. ENSURE THAT RUNOFF DRAINS AND THAT PONDING IS PREVENTED.

STEP 2: USING RSD 1101.02 SHEET 1 AND 3 OF 14, PERFORM THE FOLLOWING IN A CONTINUOUS MANNER:
 A) USE WEDGING TO CONSTRUCT A TIE-IN FROM THE PHASE III DETOUR PATTERN TO THE PHASE IV DETOUR PATTERN AS SHOWN ON TMP-10 AND TMP-11.
 B) INSTALL TEMPORARY PAVEMENT MARKINGS AS SHOWN ON TMP-10 AND TMP-11.
 C) PLACE TRAFFIC CONTROL DEVICES AND SHIFT WESTBOUND TRAFFIC TO THE PHASE IV PATTERN BY THE END OF THE WORK DAY. ACTIVATE FINAL SIGNAL.

PHASE IV

STEP 1: USING RSD 1101.02 SHEET 1 AND 3 OF 14 REMOVE TEMPORARY DETOUR AS SHOWN ON TMP-10 AND TMP-11. PLACE THE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS ACCORDING TO THE PAVEMENT MARKING PLAN.

STEP 2: REMOVE ALL WORK ZONE TRAFFIC CONTROL DEVICES.

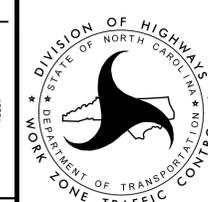
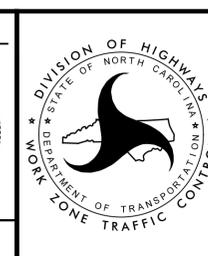
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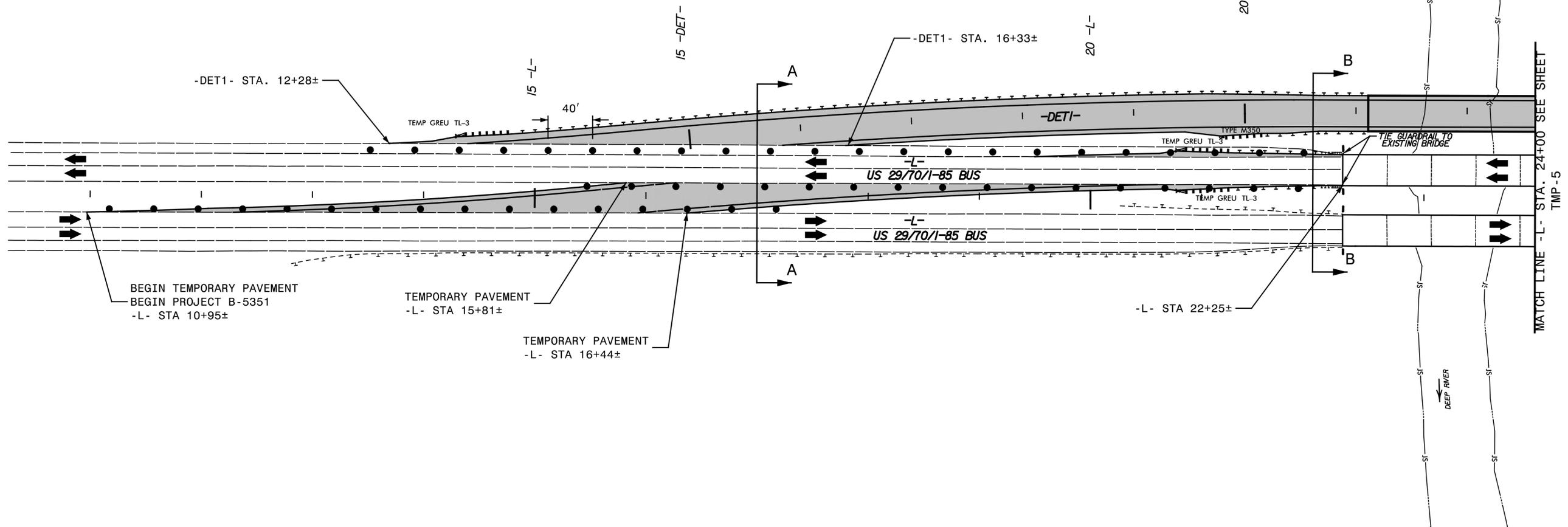
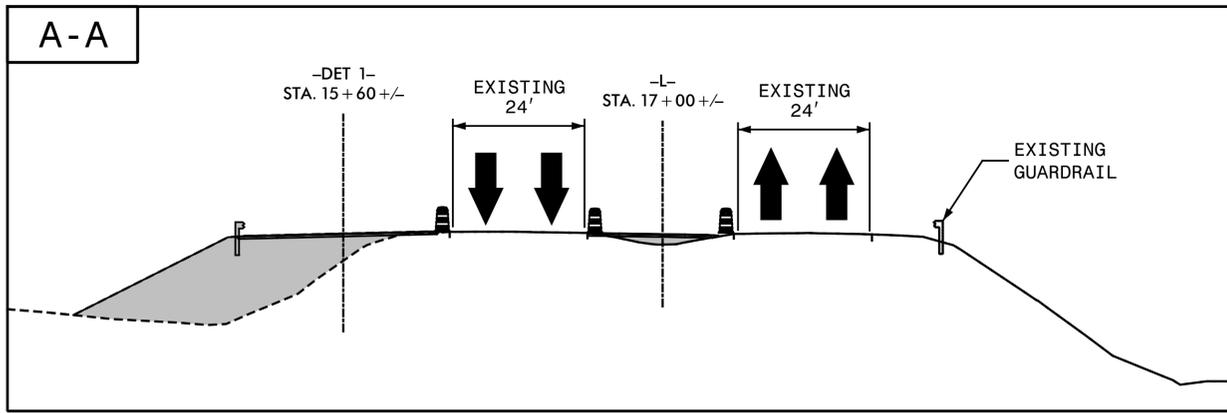
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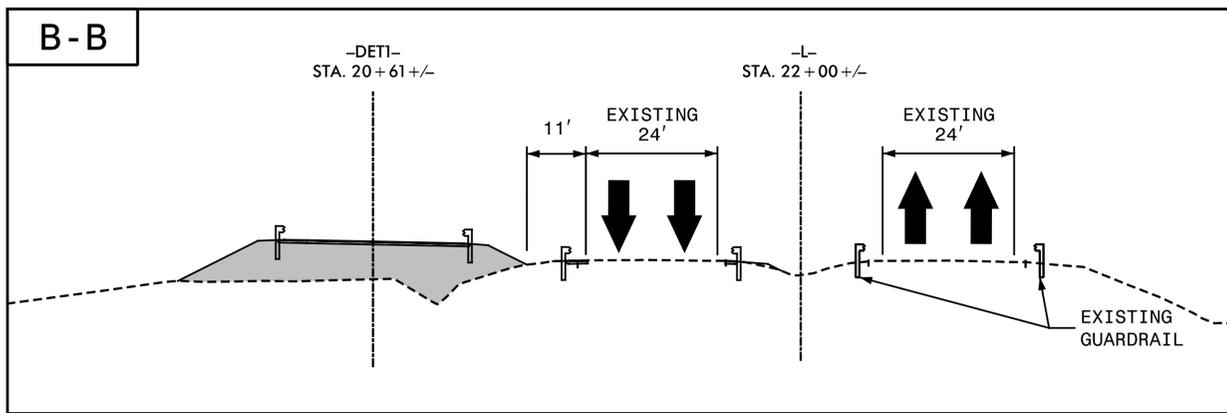
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PHASING



MATCH LINE -L- STA. 24+00 SEE SHEET TMP-5



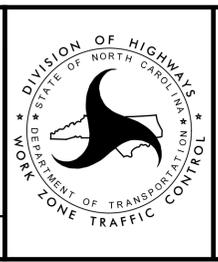
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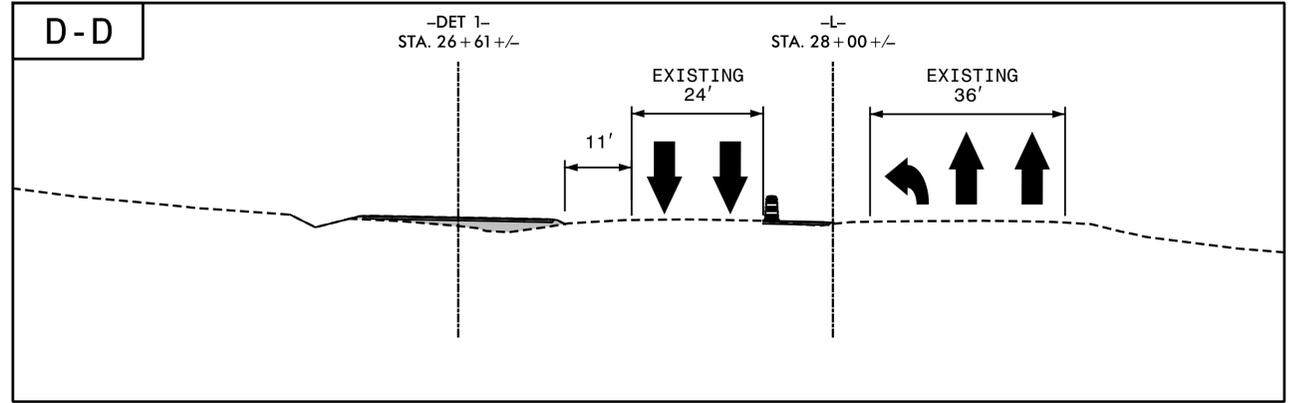
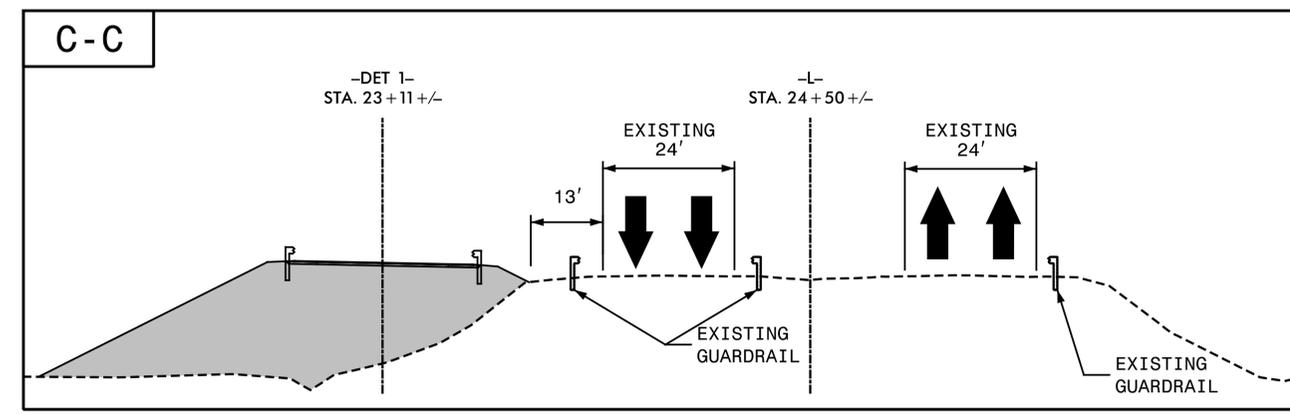
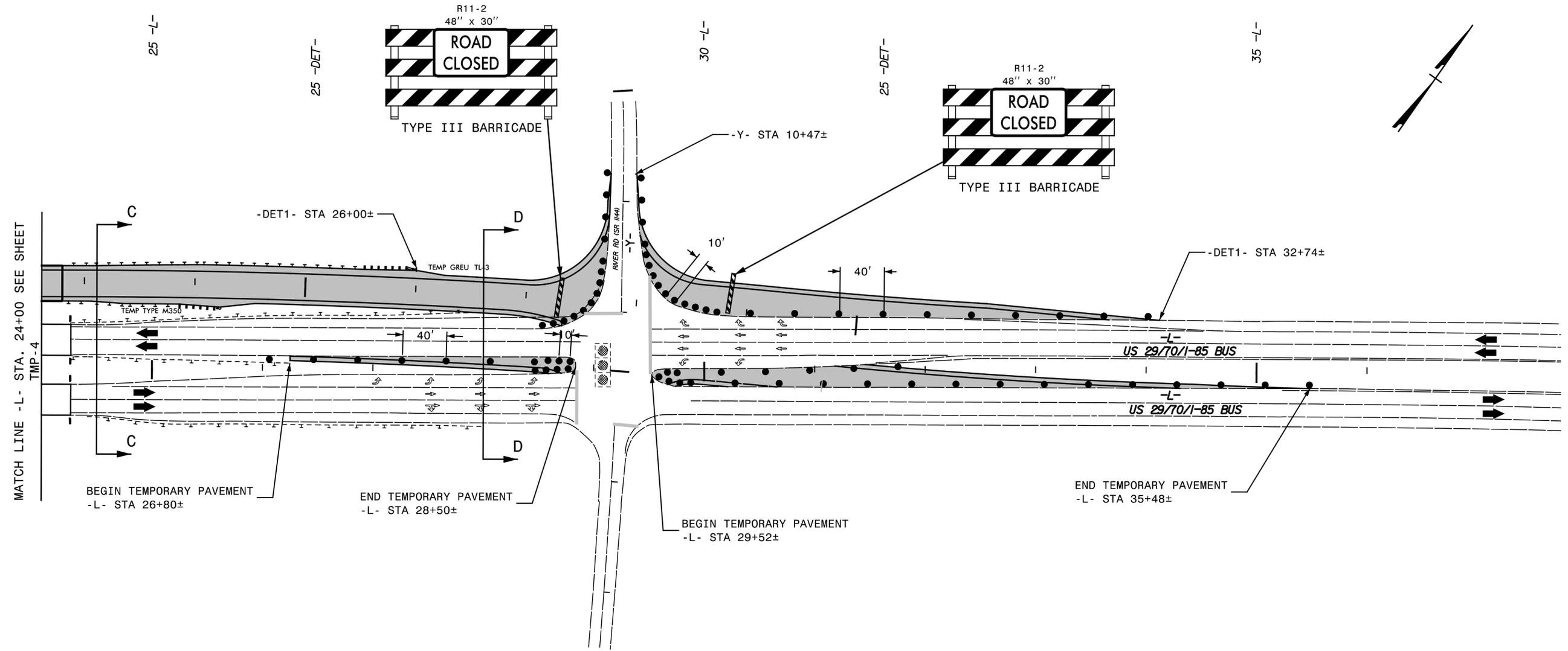
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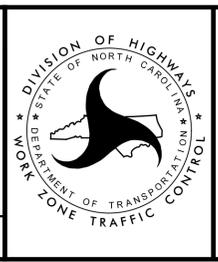
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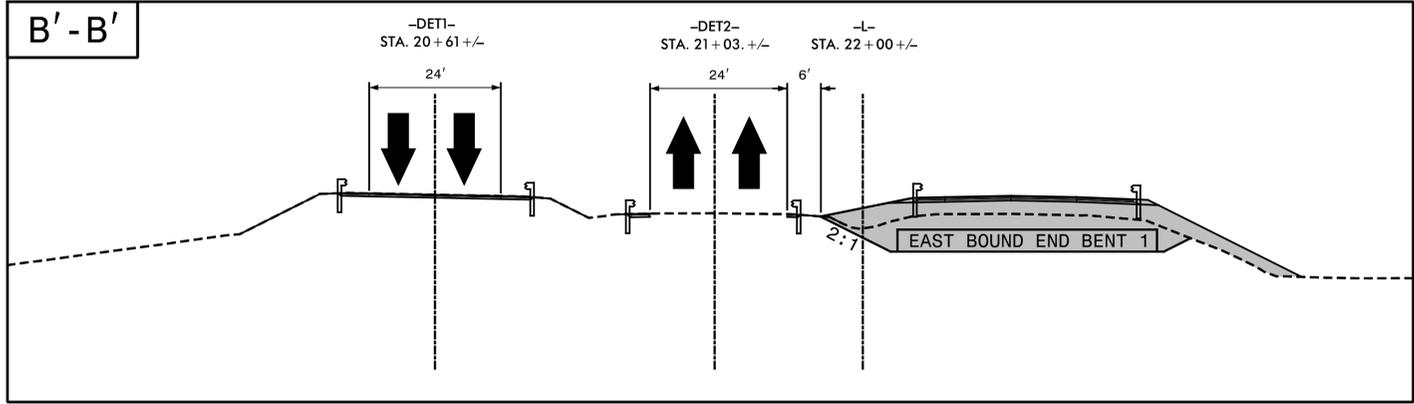
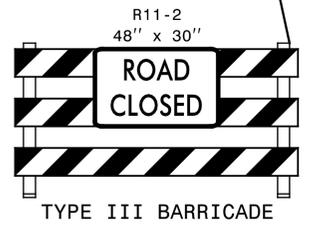
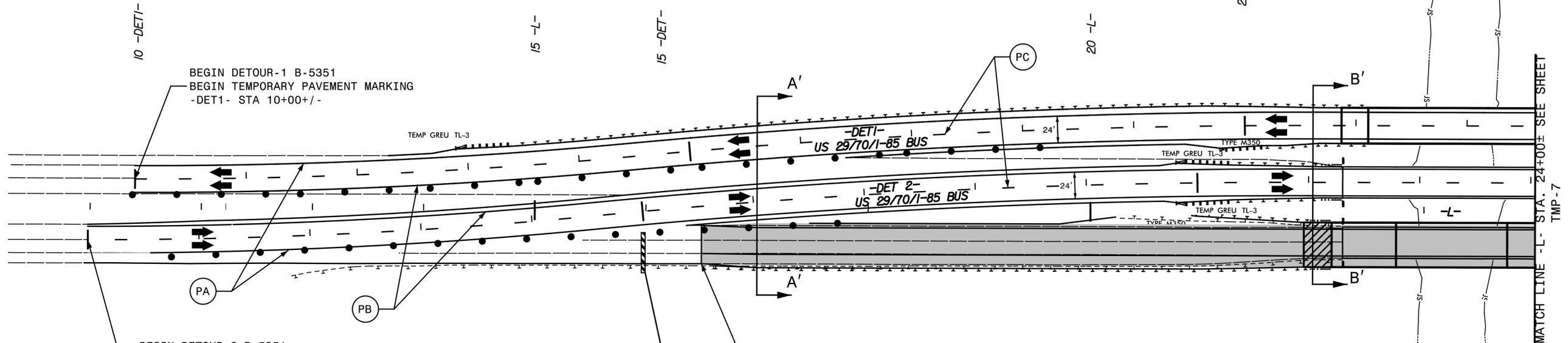
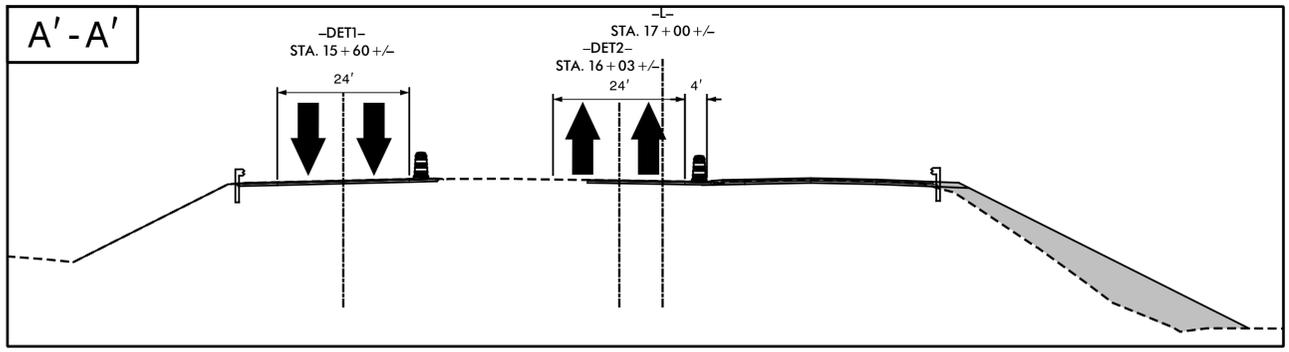
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PHASE I

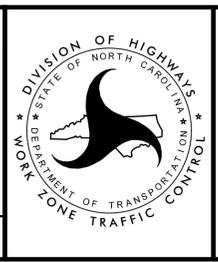
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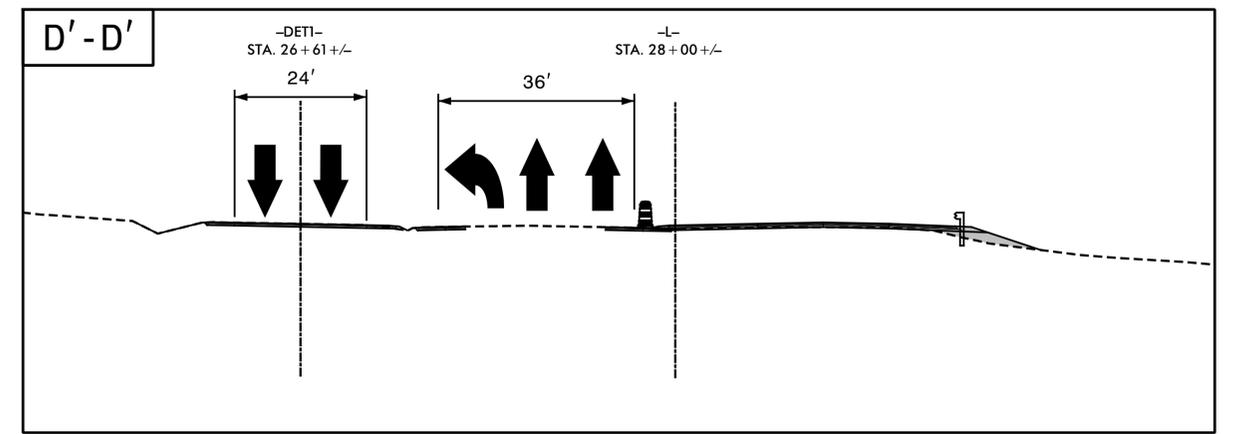
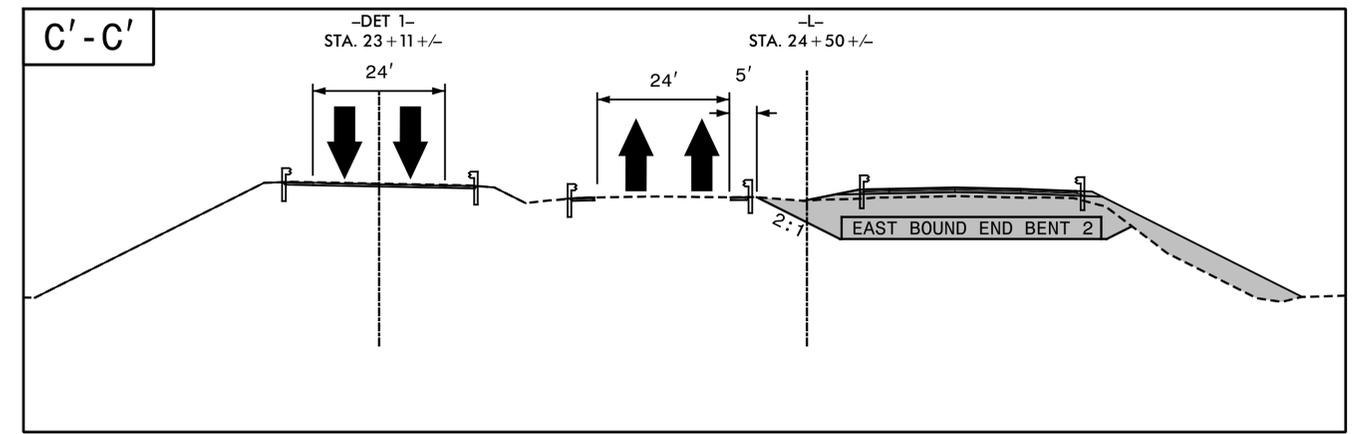
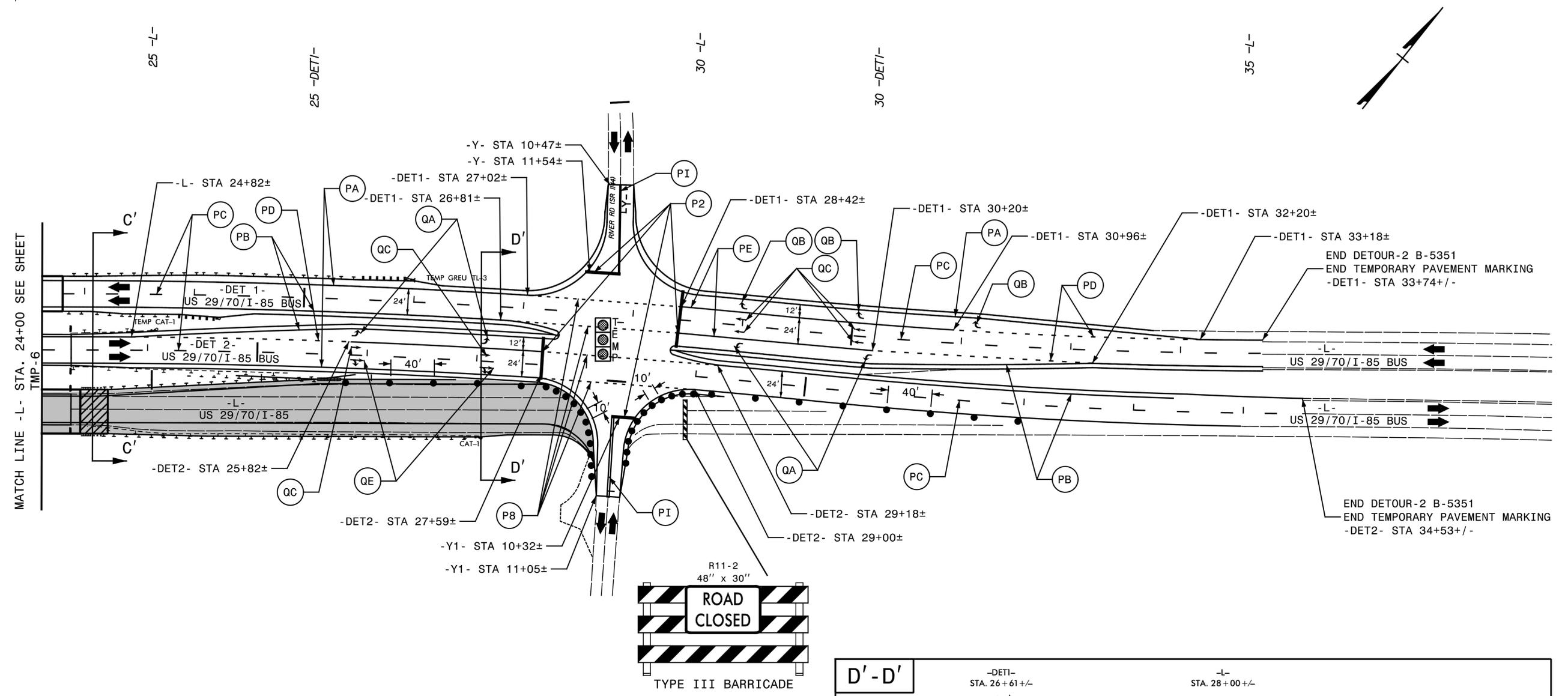
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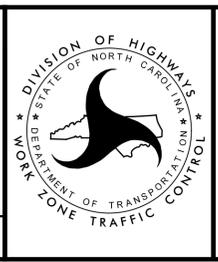
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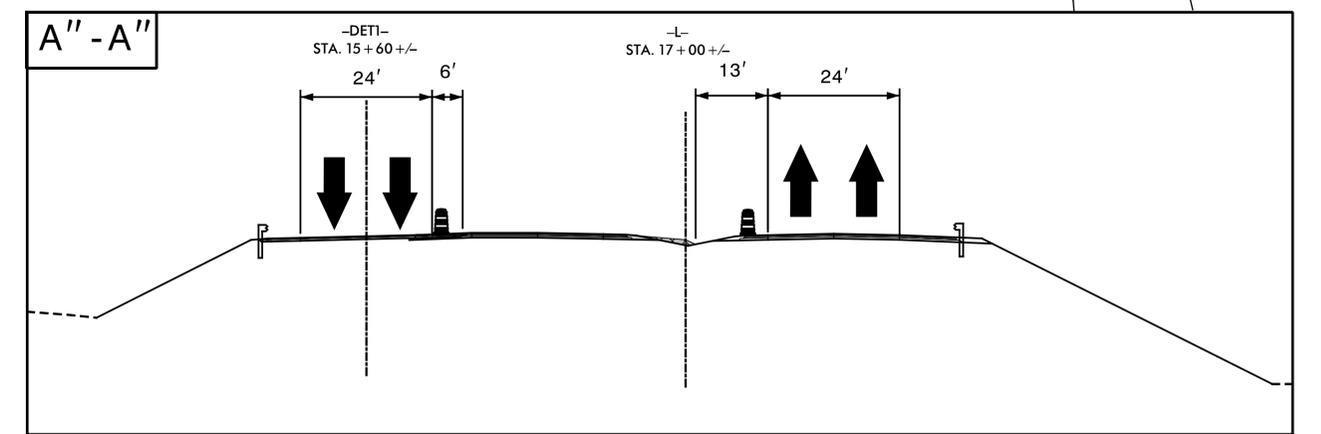
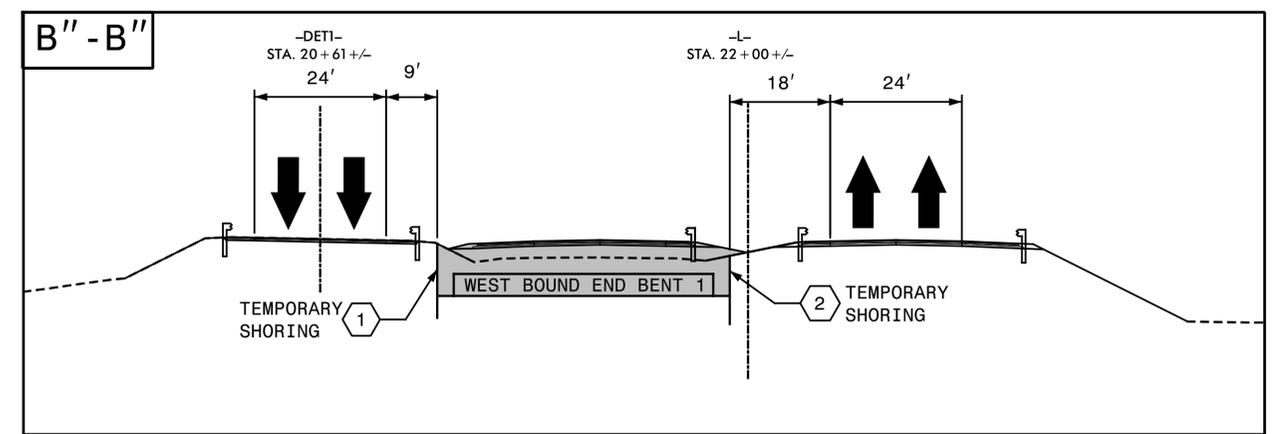
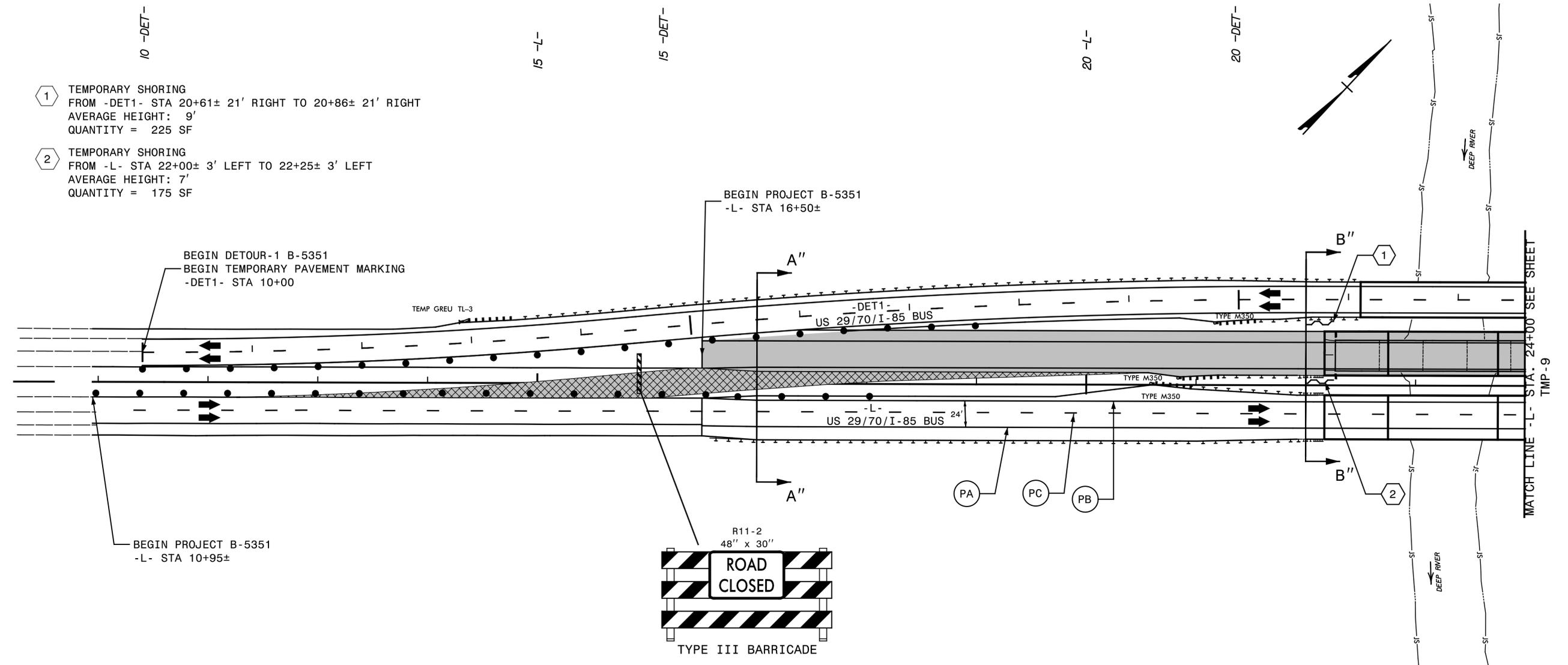
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PHASE II

- 1 TEMPORARY SHORING
FROM -DET1- STA 20+61± 21' RIGHT TO 20+86± 21' RIGHT
AVERAGE HEIGHT: 9'
QUANTITY = 225 SF
- 2 TEMPORARY SHORING
FROM -L- STA 22+00± 3' LEFT TO 22+25± 3' LEFT
AVERAGE HEIGHT: 7'
QUANTITY = 175 SF



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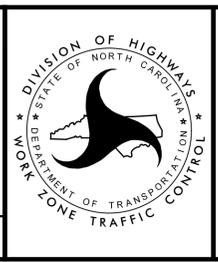
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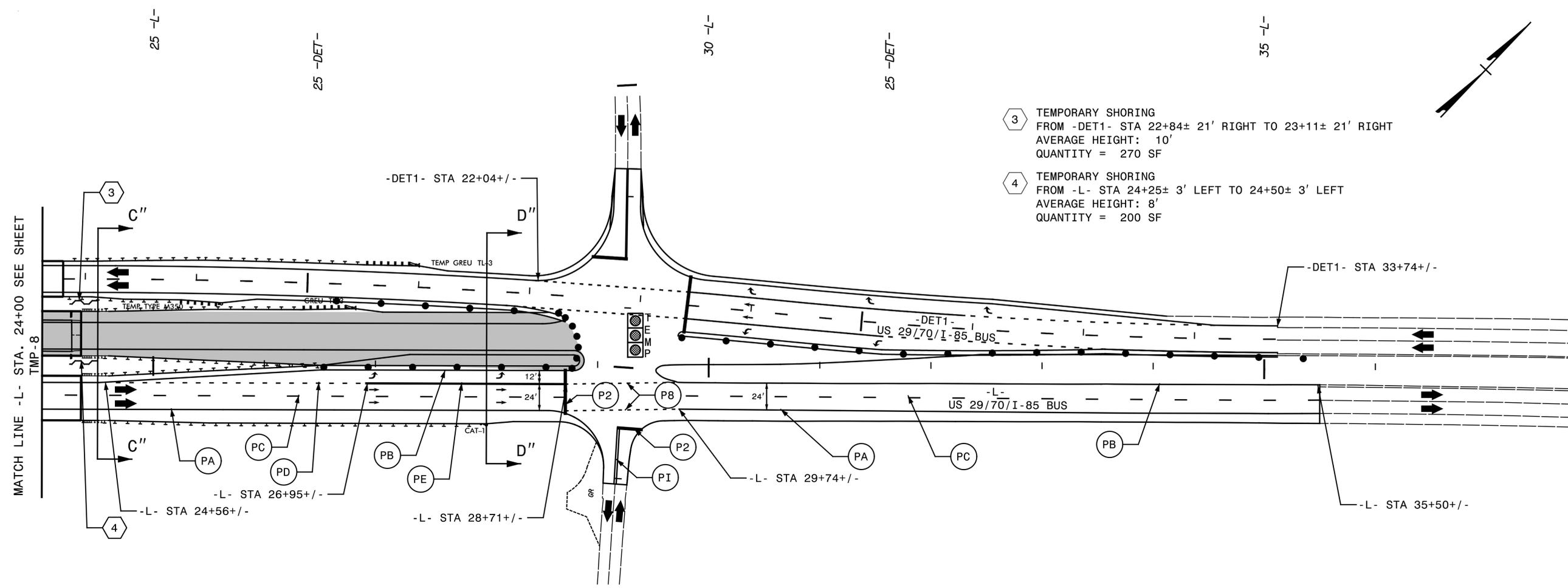
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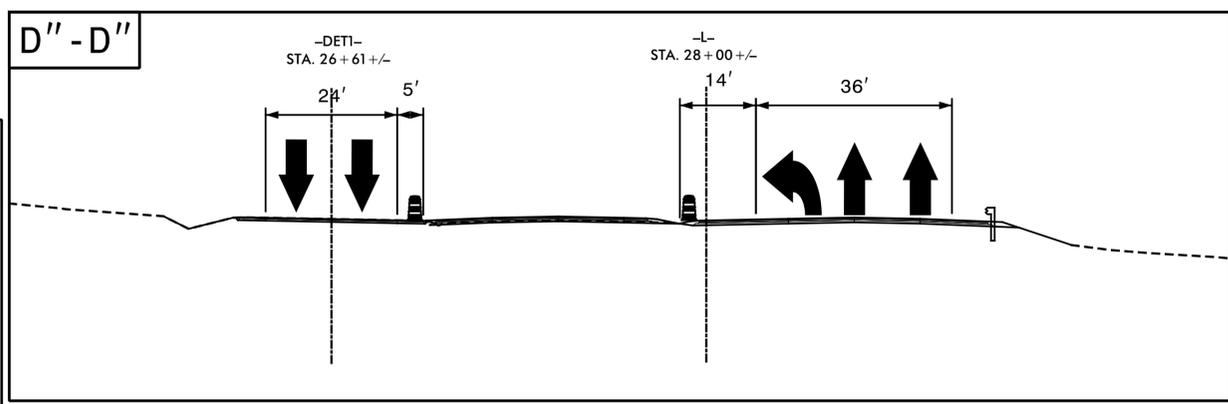
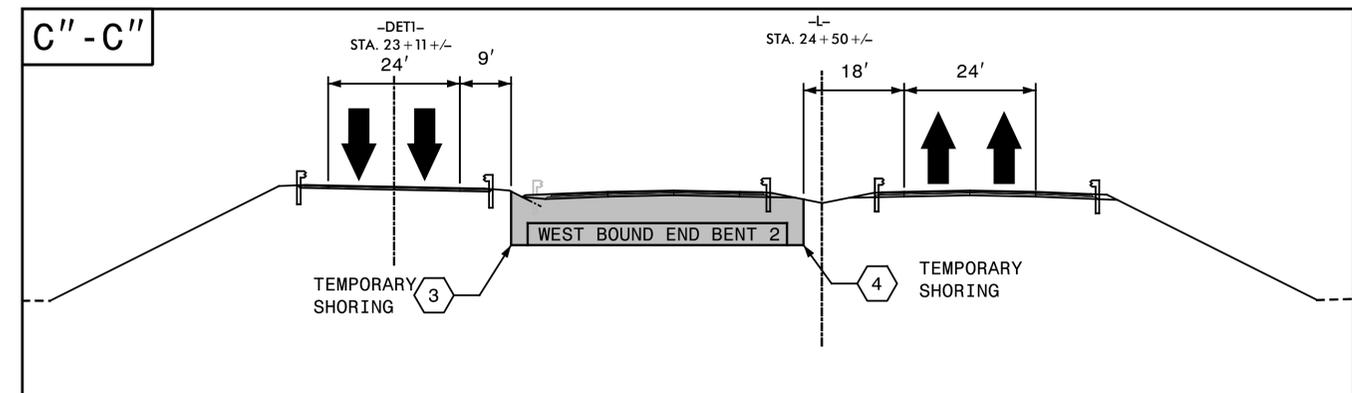
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PHASE III



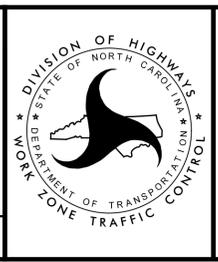
- 3 TEMPORARY SHORING
FROM -DET1- STA 22+84± 21' RIGHT TO 23+11± 21' RIGHT
AVERAGE HEIGHT: 10'
QUANTITY = 270 SF
- 4 TEMPORARY SHORING
FROM -L- STA 24+25± 3' LEFT TO 24+50± 3' LEFT
AVERAGE HEIGHT: 8'
QUANTITY = 200 SF



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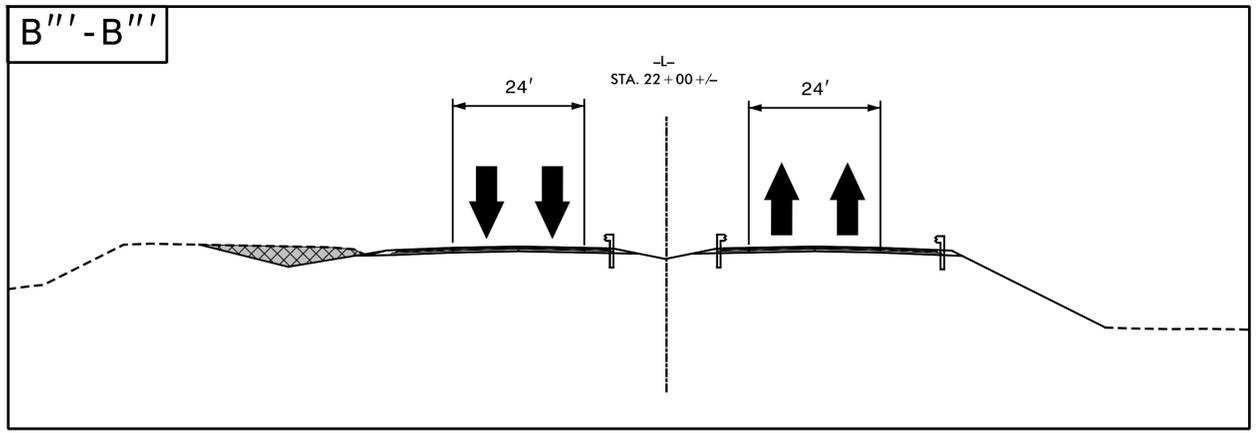
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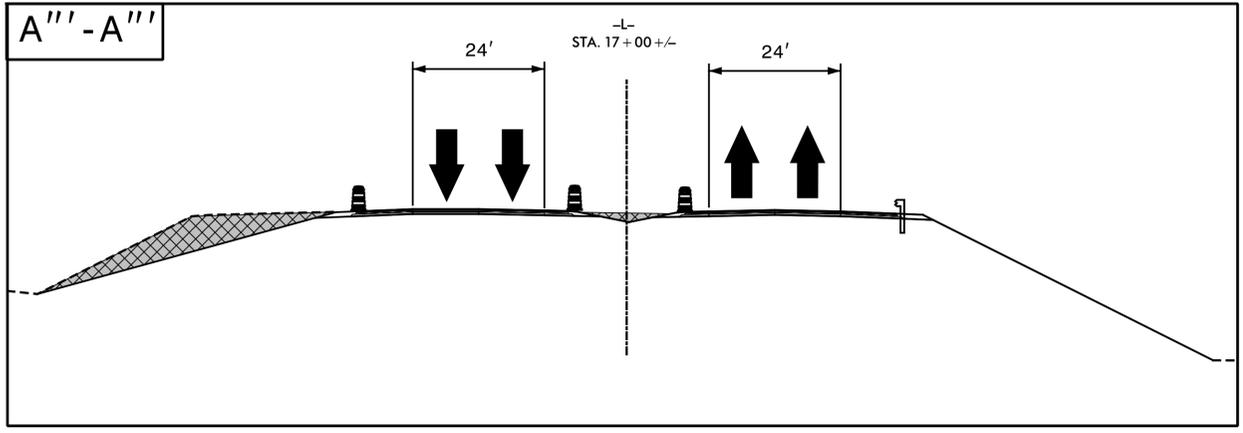
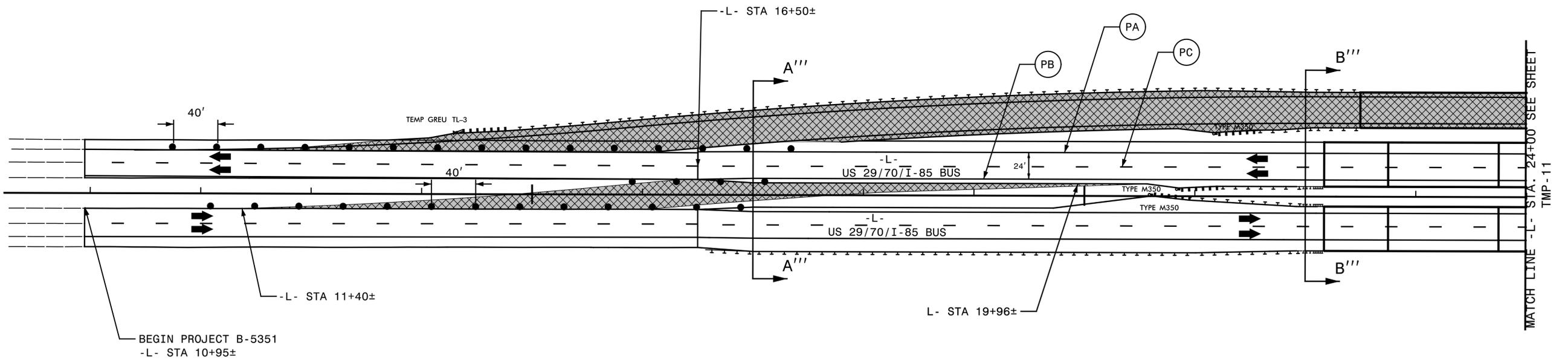
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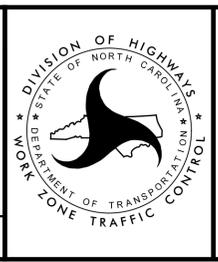
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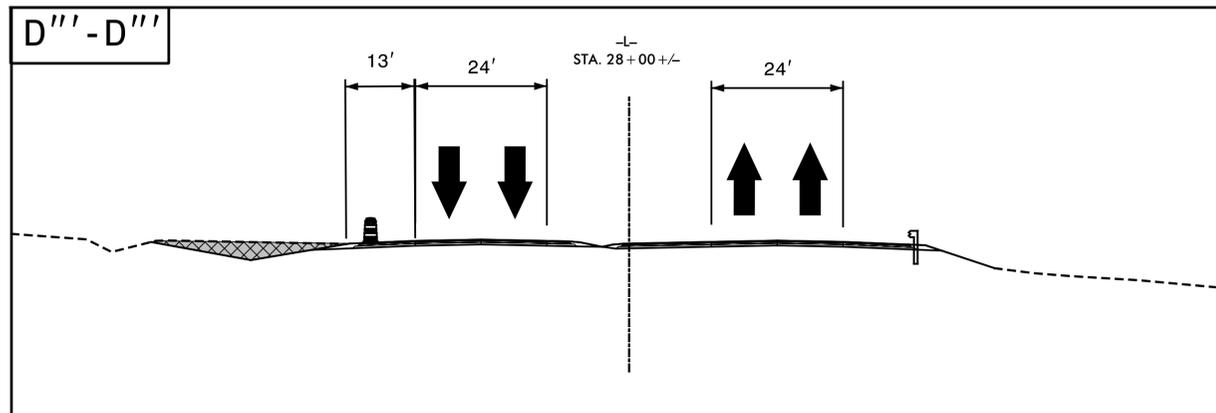
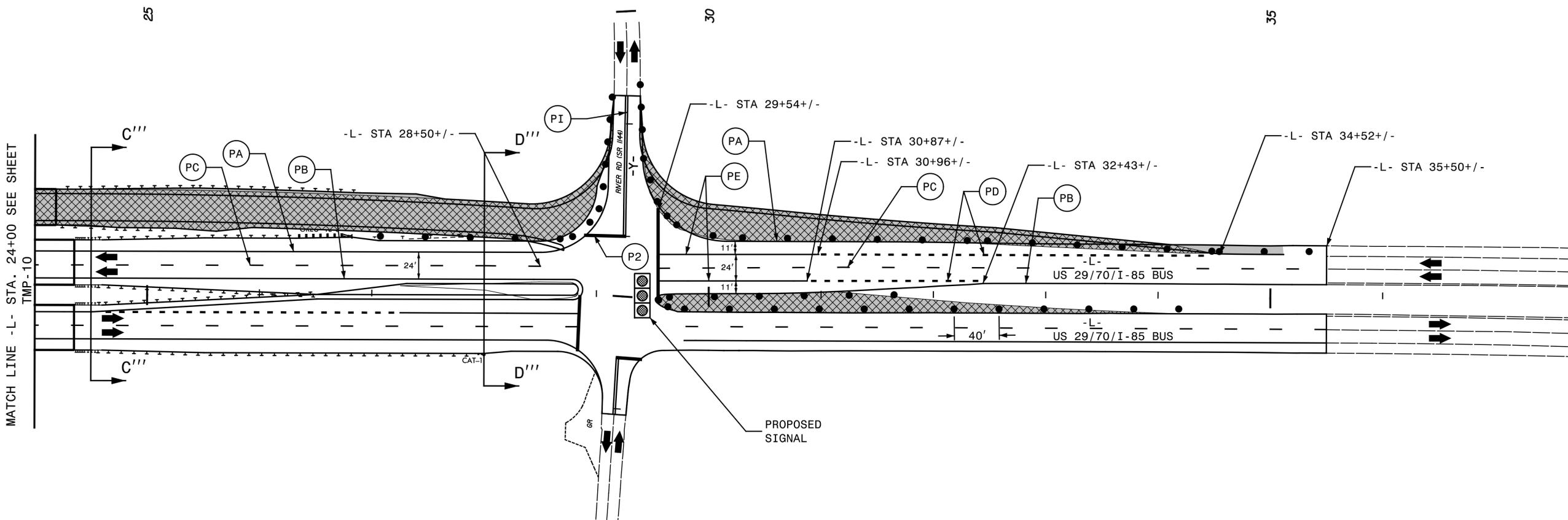
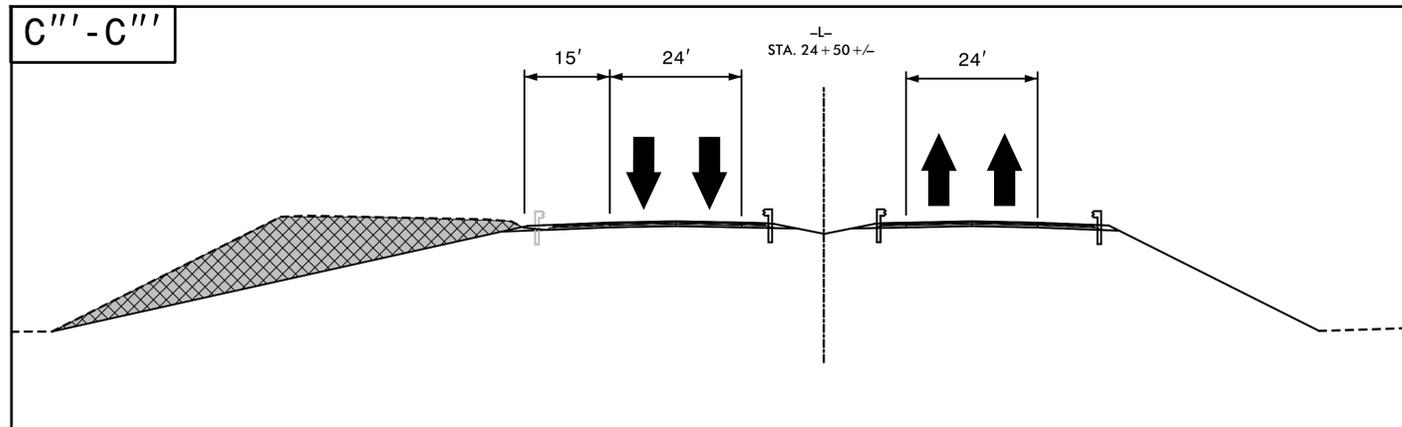
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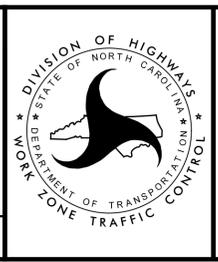
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